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ABSTRACT

This Kids Count special report examines brain development during infancy and early childhood in order to provide a basis for an informed discussion about the need for preventive programs to foster healthy child development. The report summarizes information on early brain development and how experience shapes neural connections. It focuses on the role of positive parenting in providing opportunities for enhancing attachment and language development in infants and toddlers, and the pivotal stages of early brain development related to attachment and security, vision, and language. It identifies major risks to healthy brain development in Pennsylvania's children, including family poverty, community poverty, family problems and conflict, and dysfunctional parenting. The report highlights the cumulative effect of risk factors on children's development. In addition, the report describes approaches that foster early learning opportunities and lead to healthy child development: (1) promoting good parenting; (2) promoting healthy children; (3) promoting good child care; (4) making family centers and family support services more available; (5) finding and helping more abused or neglected infants and children; (6) targeting preventive early childhood program to more high-risk Pennsylvania children; and (7) sustaining investment in high-risk children. Finally, the report presents county-level statistical information on high school dropout rate, juvenile court delinquency placements, births to single teens, child poverty rate, and children in welfare families, illustrating how poor adolescent outcomes point to missed opportunities for adolescents and a new generation at risk. (KB)

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Infancy and Early Childhood: Opportunities and Risks For Pennsylvania and Its Children

A Special Report

September, 1998

Pennsylvania KIDS COUNT Partnership

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Pennsylvania KIDS COUNT Partnership

kids count PARTNERSHIP

A SPECIAL REPORT

September, 1998

Infancy and Early Childhood: Opportunities and Risks For Pennsylvania and Its Children

Introduction

How important are the first years of a child's life? What role do they play in shaping the remainder of the child's lifetime? Can singing, talking and laughing with a baby, toddler, or preschooler have any discernible impact on their capacity to become competent, confident, loving adults?

Recent brain research reaffirms what many parents and child development experts have known for some time -- that a multitude of "windows" to the brain are wide open for learning and development during infancy and the early years.

With each new discovery, we learn more how brain development is a somewhat predictable, but nonlinear process, and that prime times exist for acquiring different capabilities. During critical or sensitive periods when these "windows" are wide open, appropriate experiences can help to make a positive, long-lasting impact on the brain, and therefore, the life of a child.

As a child ages, these openings gradually recede, reducing or eliminating the chance for parents, caregivers, teachers and others to seize opportunities to help children grow and thrive. If these opportunities are missed, more and more effort is required for a young child to rebound.

Of Pennsylvania's nearly 3 million children, more than 925,000 are currently under age six.

What price do we pay if we fail to recognize and effectively address the risks that confront our children starting at the very beginning of their lives? Are they more likely to fail in their adolescent years, setting the stage to fall short of their dreams of realizing a fruitful adulthood?

Of Pennsylvania's nearly 3 million children, more than 925,000 are currently under age six. How well do we as leaders, parents, teachers and caregivers recognize the importance of the early years in our children's lives and the critical role they play in the development of loving, helpful, intelligent, capable, and responsible adults? How can we seize these opportunities and avoid the risks?

Infancy & Early Childhood: Opportunities and Risks seeks to shed some light on brain development in these formative years and to provide a basis for a more informed discussion about the need to make preventive investments that foster healthy development of our children.

Shedding Light On Early Brain Development

A baby's brain is a work in progress. At the time of birth, an infant has 100 billion nerve cells, or neurons, in the brain. It is believed that few or no more are produced for the remainder of life.

At birth, many tentative connections or wiring patterns are established just waiting for daily experiences to shape and eventually "hard wire" these connections.

Over time, experience stimulates brain cells to specialize and "solder" these connections, forming what will soon become the vital pathways for vision, hearing, language, emotions, and movement, through which a baby learns and encounters life.

Simple interactions with a parent or child care teacher help to build these connections.

continued on page 30

Positive Parenting Provides Special Opportunities...

Babies learn attachment, language, and much else from the ordinary acts of parenting. Below is an example drawn from parent training material of Zero to Three, an organization that promotes the importance of the first three years of life.

An 8 month-old baby boy has been sitting in a jump seat sleeping for a short time. He awakens when the door slams and he hears a deep voice.

Immediately, he begins to bounce and crow. Every inch of him is excited. His father enters the room, puts down his lunch pack and walks toward him, saying, "And hello to you – big guy – come and give your old man a hug." The baby grips his father's shirt and reaches for his cheek and his father nuzzles the baby's hand with his mouth.

The father asks if his son is ready to watch some of the ball game. The baby mirrors his father's happy feeling and responds with a chain of babbling. The father widens his eyes and listens, then asks his son's opinion of today's starting pitcher. The baby looks away – calming himself. The father waits and the baby turns back, locks eyes with his father, and produces a long string of syllables, ending in a laugh. His father grins and says, "You may be right."

The baby's mother then asks the father if he'll change the baby's diaper. The father grimaces, but agrees. Throughout the diaper change, the baby and his father continue a dialogue full of baby movements, facial expressiveness and vocal exchanges.

This baby anticipates the pleasure he will have with his father. He has already learned that most of the time his father feels very good with him and he feels very good with his father. He has also learned to have "conversations" with his father – to initiate, be intentional, take turns, listen and respond.

He feels respected and understood. He likes himself.

Windows Of Early Learning: Special Opportunities

A thoughtful look at the pivotal stages of early brain development offers some intriguing insights and special opportunities for parents, educators and policymakers to improve the well-being of children in their care.

Attachment and Security: The presence of a warm, caring, stable relationship with at least one other person, usually a parent, is the single most important early experience for newborns. It is through these earliest interactions that babies learn the skills necessary to care, love, socialize, and empathize throughout their lives. Attachment begins immediately at birth and should be nurtured. Research tells us that children who do not experience such positive attachments by age four may experience long-lasting problems. The early attachment period can be a time of extreme vulnerability, during which later life outcomes can be adversely affected. Lengthy maternal depression can lead to neglect, which can change the structure and chemistry of a baby's brain, as can child abuse. Such ongoing distresses can create deficits in a child's intellectual abilities and compromise emotional development.

The spoken language has an unmatched impact on an infant's brain development and the child's future prospects.

Vision: Babies can see at birth, but not well. Research has revealed that the prime time for learning to focus on an object is very early in the life of a newborn. The vision center of the brain experiences tremendous growth from age 2 to 4 months, opening up the world around the infant. Babies also begin to develop depth perception and distinguish shapes and the faces of people throughout their first year of life. Data show that babies have the benefit of a wide open window of opportunity to enhance these more complex visual skills throughout the years before school begins.

Language:The spoken language has an unmatched impact on an infant's brain development and the child's future prospects. Researchers say the number of words an infant and toddler hears each day is a strong predictor of later levels of intelligence, school success, and social competence in later life. However, there is one catch – the words must come from an attentive, responsive, human being – "up close and personal."

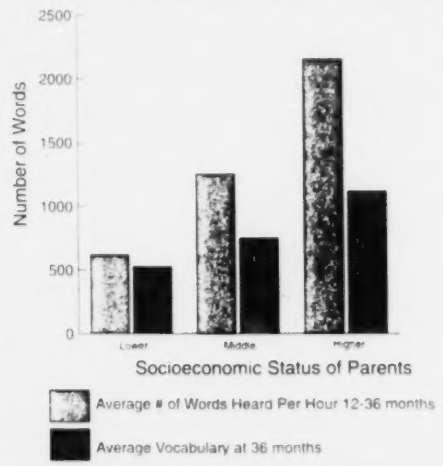
As far as we know, radio and television do not produce the same benefit.

At the age of three months, a baby can distinguish several hundred different spoken sounds, which is many more than are present in a native language. This is one of the reasons parents are advised to talk to their infants. It is also why it is critical to test for hearing early in a child's life. If a child's hearing is impaired, the normal progression of language development can be slowed.

A fascinating study by Betty Hart and Todd R. Risley, University of Kansas psychologists, explored differences in the early language environments of children by the socioeconomic status of their parents.

Between the ages of 12 and 36 months, toddlers of lower socioeconomic status parents heard, on average, 600 words an hour, while toddlers of middle socioeconomic status parents heard 1,200 words an hour and those of higher socioeconomic status parents heard 2,100. At three years of age, the number of different words the three groups of children were saying paralleled these differences with oral vocabularies of 500, 700 and 1,000, respectively. For the middle socioeconomic group, the overall number and variety of words and the predominant tone of language varied, but the differences between the experiences of the most advantaged children compared with the least advantaged were significant. All quality features, such as varied vocabulary, positive tone and careful response to a child's comments, were present in everyday parenting activities of all families, but in differing amounts.

Figure 1: Early Language Environments of Infants and Toddlers



Source: Betty Hart and Todd Risley. *Meaningful Differences in the Everyday Experience Of Young American Children*, 1995

... For Enhancing Attachment and Language Development

Another 8 month old baby boy is sitting in a jump seat sleeping.

He awakens when the door slams and he hears a deep voice. Now awake, he wiggles restlessly and looks in the seat's tray for something to hold. Everything is on the floor. He makes a noise to convey his feelings of frustration. He is trying to communicate.

The father comes in and tosses his coat over a chair. The baby grunts and brings his hand to his mouth. The father glances at him and then glances away. The mother calls to the father and says the baby probably needs a diaper change and asks if he'll change the baby while she finishes dinner.

Sarcastically, the father says, "Thanks a lot – is that a special present for me?" He disappears. Suddenly, the baby is abruptly lifted out of the seat from behind. The baby is surprised, but only stiffens. He is quiet.

"OK stinko – let's clean up your pants." The baby is placed on his back to be changed. He lies still – chewing on his hand.

Once, he twists, extends his arm to grasp an object and lifts his leg. The father pulls him back flat, lightly slaps his thigh and says sharply, "Stay still – I'm almost done."

The baby's eyes widen, but he stays quiet – just chewing his hand. The father finishes quickly and returns him to his jump chair.

This baby is also learning. He is learning to be wary in what he communicates to his father. He has learned to be passive and to curb his curiosity. He has no sense that his father enjoys him. He feels neither understood nor confident. He has learned little about turn taking, mood sharing, or dialogue with his father.

Parent Education: Children Ready to Attend School Will Be Better Prepared For A Brighter Future

Relying on a parent's innate ability and own prior experience is often not sufficient. Some parents may know how to nurture their children and how to provide for their basic physical needs, but they may not know how to talk or play with them or how important these activities are.

Upon arriving for the first day of school, a child will be expected to listen, to follow directions, to be interested in tasks and toys, and to start and finish small projects. The child will be expected to express needs, to respect those of others, to be able to wait, and to know when help may be needed.

Consider the school readiness of the following two children.

As one of 18 first graders, a boy busily works in his activity center. He smiles as the teacher walks by. With obvious pride, he circles the letters that go with the pictures (Z for zebra, etc.). Though he did not at first understand what to do, he asked the teacher to help him and watched the children around him.

Nearby, another boy sits anxiously in a chair. A puzzled expression on his face, he looks around at the other children. After scribbling different colors on his sheet of paper, he gets increasingly restless.

He grabs a friend's pencil and starts taunting him. The teacher reminds him of correct behavior and places him in the "time out" chair in the back of the room. He looks relieved.

He now knows what he will be doing for the next few minutes. And, even better, no one else knows that he was confused by the assignment.

For these two boys, nature and nurture have interacted in varying ways for the developmentally most critical 5 years of their lives. One is now ready to gain from the public's investment in his formal education, and one is much less prepared.

Source: Adapted from Zero To Three: National Center for Clinical Infant Programs; Heart Start: The Emotional Foundations of School Readiness; 1992, Arlington, VA.

A child who heard, "Did you see the yellow bus out the window?" or "It's cold. You need to put on a coat before you go outside?" tended to respond more positively than did the child who frequently heard, "Stop that," or "Get your coat on -- NOW."

All parents in the study started talking more to their children by age two. But by then, the differences among children were already great. Those left behind did not catch up by age 3, nor as late as age 9. Every child learned to use language and could say complex sentences, but the language-deprived children lagged behind in vocabulary and in language-related academic areas later in school.

> The implications of prime times is that experience should begin when a window opens, even if it may be many years before that window closes.

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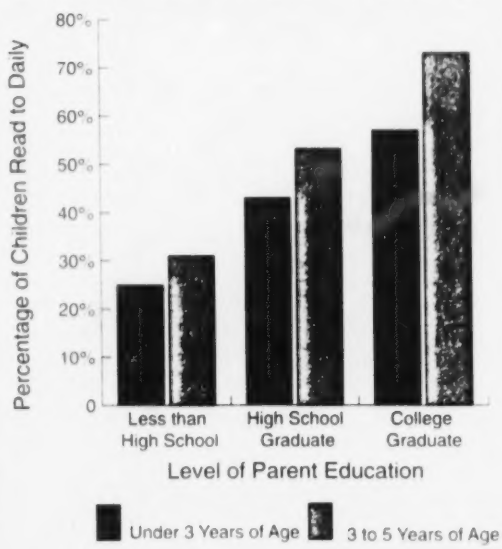
Parent-Young Child Reading

National initiatives have underscored the importance of parent-child reading as a cornerstone of early child development. The first of the eight National Education Goals established by the

Figure 2: Parent-Young Child Reading



Note: For two parent homes, data are based on the parent with the highest level of education.
Source: National Education Goals Panel, Special Early Childhood Report 1997, October 1997

nation's Governors in 1990 is that "all children in America will start school ready to learn" by the year 2000. One of the three objectives of this School Readiness Goal is "Every parent in the United States will be their child's first teacher and devote time each day to helping their child under 5 learn, and parents will have access to the training and support they need."

Reading to children helps them associate oral language with printed text. Most important, reading to children builds their vocabularies and background knowledge about the world around them.

Indicators of progress toward this national goal include the percentage of children below school age whose parents or other family member read to them every day. Those data, which likely reflect Pennsylvania families as well, tell us that only 45% of children under 3 and only 56% of children 3 to 5 are read to by parents or other family members on a daily basis.

That means roughly, one in every two children below school age does not, for example, sit with a parent or other caring adult and have a bedtime story read to them each day.

The Risks to Pennsylvania's Children

What are the major risks facing Pennsylvania's children and families and what role do they play in influencing healthy development?

Poverty - A Key Risk Factor

One in six Pennsylvania children lives in poverty. Poverty is the greatest, most consistent factor that accompanies nearly every major problem of children and families, and is perhaps a contributor in and of itself. These problems include parenting insufficiency, abuse and neglect, school failure, juvenile delinquency and more.

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Family poverty, in turn, has been shown to be associated with low parental education, poor parental employability, teenage motherhood, and single parenthood. Nevertheless, despite these poor economic conditions for families, some children do thrive. From a long-term Minnesota study, we learn that the primary protective factor that seems to make some poor children more resilient than others is a secure attachment with their caregiver. Factors that enable some parents to care well for their children despite their poverty include knowledge of child development, social support available to the parents, and therapy for parents who have been abused or neglected themselves. [1]

Community and Other Risk Factors

Other key risk factors include:

- community poverty such as densely populated, very low-income urban communities with low social cohesion and high crime;
- family problems and conflict, including divorce, child and spousal abuse; and
- dysfunctional parenting, such as lack of clear expectations for behavior and failure of parents to monitor their children, which may be accompanied by drug or alcohol problems or mental illness.

Research underlying Communities That Care, a community-based, risk-focused prevention model now being implemented in Pennsylvania by the Governor's Community Partnership for Safe Children, indicates that community risk factors associated most consistently with all adolescent problem behaviors are extreme economic deprivation or poverty. The family risk factors associated most consistently across all adolescent problem behaviors are family management problems and family conflict. According to the research, the most consistently recommended program strategies for reducing these risk factors -- prenatal and infancy programs and parent training and early childhood education – point not surprisingly to the prime time early years.

A Compounding Effect

Perhaps one of the most telling aspects of risk research is that risk factors have a cumulative effect. On average, each risk factor that a child experiences erodes the child's potential.

Evidence suggests that children may surmount one or two of these risk factors, but as the number of risks in a child's life increases, the chances of failure mount rapidly. In the end, it seems to matter less which risk factors, but rather how many a child experiences.

Poverty does have debilitating effects, creating a sense of helplessness and hopelessness among those it impacts. But every day in Pennsylvania, poor single parents resourcefully manage their households. Parents with elementary school reading levels read to their toddlers, instilling a love of learning in their children.

Being a successful parent is not only about money, but money does matter and bolsters the families struggling to offset the stresses of poverty and other risk factors.

Parents living in poverty report more financial and psychological stress. They may worry about the "basics," like food and housing, or dangerous neighborhood conditions and the lack of support systems. Family income affects not only these social resources, but also the material resources available in the home. Studies have demonstrated that parental stress, depression, and perceptions of financial strain account for some of the variations in amount of nurturing children receive.[2]

> Perhaps one of the most telling aspects of risk research is that risk factors have a cumulative effect.

Thus, low family income has effects above and beyond the other risk factors that often accompany it.

Missed Investment Opportunities

Recent research on children and early brain development shows us that the early years are critical: Emotional stability is greatly affected by how the brain develops in the first two years of life. An adult's potential vocabulary is influenced by the words filtered through the brain before age three. The neurological foundations for math and logic are established before age four. And, by kindergarten the process is half over.[3]

The gap between the two paths in Figure 3 dramatically illustrates how Pennsylvania invests in children. We now know that if we fail to intervene in the lives of our youngest children we will miss windows of opportunities that may be difficult to reopen later.

Pennsylvania needs to increase investment in children before they reach kindergarten. At the same time, it cannot decrease support for school-age children and adolescents.

Treatment and remediation services for youth in need are critical to compensate for missed opportunities. In addition, we must invest in adult learners who want to continue their education and strengthen their skills.

These investments will provide Pennsylvania with excellent dividends in more effective child rearing.

In the end, providing adequately for young children's development cannot be a zero-sum game.

Targeted Early Support Opportunities That Work

A recent RAND Corporation review of evaluations from nine very well researched programs that help young at-risk children concludes that such programs can:

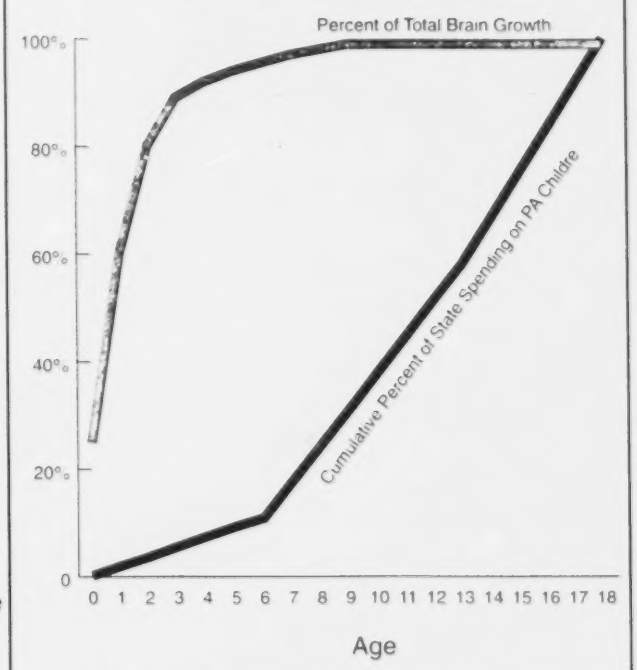
(1) benefit children and families; and
(2) result in long-term savings for society through up-front investment of dollars.

In RAND's Investing in Our Children: What We Know and Don't Know About the Costs and Benefits of Early Childhood, "early childhood intervention" is defined as:

> "attempts by government agencies or other organizations to improve child health and development, educational attainment, and economic well-being, particularly among disadvantaged children, with home visits by nurses, parent training, enriched preschool, and a variety of other programs."

In its study, RAND compared the later savings to taxpayers versus the up-front program

Figure 3: Brain Growth Versus State Spending On PA Children



Source: Estimates produced by Pennsylvania Partnerships for Children as part of the National Association of Child Advocates Children's Budget Watch project

costs for the Perry Preschool program in Ypsilanti, Michigan and the Prenatal Early Infancy Project in Elmira, New York (PEIP).

In the mid-1960s, the Perry Preschool program enrolled low-income, African-American children for a 1-to-2 year period in a part-time enriched preschool where the teacher also made weekly home visits. In Elmira's more recent PEIP program, disadvantaged, primarily non-minority mothers received 32 home visits from the fourth month of pregnancy through the child's second year from registered nurses who had received additional training in parent education. In addition, the program established support networks for the mother, and linked the family to other health and human services. The group of Elmira mothers who were "higher risk" were single parents and of low socioeconomic status. "Child" participants in the studies are now 27 and 15 years old, respectively.

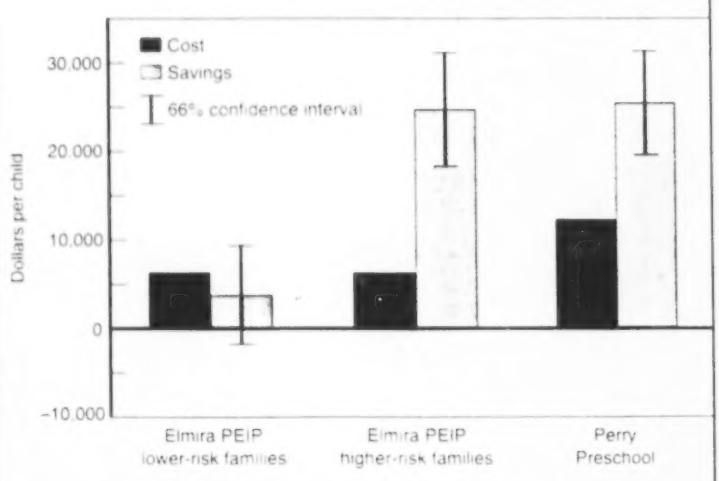
The savings of $25,000 per Perry Preschool child and $24,000 per Elmira higher-risk child far and away exceed the costs of $12,000 and $6,000, respectively. The difference is a net benefit to taxpayers and to society as a whole. The sources of savings included reductions in special education services, fewer repetitions of a grade in school, reductions in criminal justice system costs, reductions in welfare costs, and increased tax revenues due to increased earnings. If a benefit helps participants but does not also save taxpayer dollars, it was not counted as savings. To date, the savings of the lower-risk Elmira program have not exceeded costs; this may change as the Elmira children become adults. Nevertheless, the savings difference between the higher-risk and lesser-risk children illustrate the value of targeting programs to children who will benefit most, if taxpayer dollars cannot provide for all. Similar savings are not guaranteed to result from every targeted early intervention program now serving families or begun from here on out. Other literature reviews emphasize that successful programs have well-trained, closely supervised personnel, low ratios of children to staff, and involvement of parents as much as possible, and are intensive and expensive.

Seizing The Opportunities: Bridging The Investment Gap

With current knowledge of early child development and the cost-effectiveness experience of targeted early childhood intervention programs, Pennsylvanians can take some common sense approaches that will help foster early learning opportunities and lead to healthy development of its young children.

- **Promote Good Parenting**: Connections in a child's brain are sparked by the most ordinary acts of parenting, such as "talking with an infant" and "reading" a picture book with a toddler. However, relying on some innate ability of parents to provide ordinary good parenting to their children is not enough. Parenting education, formal and informal, ranging from health and safety to child development issues, needs to permeate our communities, through news media, and health care, child care, recreation, education and service providers who touch the lives of young families.
- **Promote Healthy Children**: One in every eleven Pennsylvania children, including babies, toddlers, and preschoolers, is without health insurance.

Figure 4: RAND Cost-Savings Analysis PEIP, Perry Preschool Studies



Source: RAND Corporation, Karoly, Lynn A., Greenwood, Peter W., Everingham, Susan S. et alia, Investing in Our Children: What We Know and Don't Know About the Costs and Benefits of Early Childhood Interventions, RAND, Santa Monica, CA, 1998. To obtain, call 310-451-7002 or http://www.rand.org/publications/MR/MR898/

And even with coverage, a plastic card does not insure against lack of parent understanding of the importance of well-baby check-ups, immunizations and regular health screenings. Uninsured children need to be identified and enrolled in health coverage and parents need to secure a regular health care provider for their children. This "medical home" needs to provide whatever support is necessary to assure that the child is seen for timely preventive care.

- **Promote Good Child Care**: Three out of five Pennsylvania children are in some type of child care each day. We know that many caregivers have little training in the most effective techniques of relating to babies, toddlers, and preschoolers. Without financial assistance, low-income parents often cannot afford high quality child care. Mothers moving from welfare to work are not necessarily locating high quality child care without specific inte rvention. Promoting good child care can be done via caregiver training and standards for child care. Public financial support must be in place so that all low-income families can access the care they need.

- **Make Family Centers and Family Support Services More Available Across the Commonwealth**: Pennsylvania's family centers serve a small percentage of families with young children. A family center is both a place and a means of connecting parents of young children to resources, services, and supports. Family centers can be a place where parents come with their babies to meet and connect with other parents; gain parenting tips; and find a lending library of books, toys, equipment for their babies, and books and videos on parenting for themselves. Home visitors may work out of family centers. These family support efforts focus on families, build on family strengths, connect families with the community, are prevention oriented, offer a wide-range of support and referral services, and allow families an opportunity to articulate their concerns and determine the services they may need. Expansion of family centers is a wise investment in Pennsylvania children.

- **Find and Help More Abused or Neglected Infants and Children**: Locating children living with a parent or caretaker who is dysfunctional because of alcohol, drug abuse, mental illness, or other problems can prevent or reduce the incidence of serious trauma in the very early years and can make later treatment interventions easier. The goal should be to assure the child's safety and take all steps necessary to improve the family's functioning and keep it intact.
If a family cannot successfully be reunited, a permanent placement for the child should be secured as soon as possible.

- **Target Preventive Early Childhood Programs to More High-Risk Pennsylvania Children**: By design, Pennsylvania's Early Intervention program for children birth to school age serves only children with disabilities or manifesting serious developmental delays. Head Start serves only half of Pennsylvania's eligible three-and four-year-olds in poverty. Early Head Start for children under three serves only a handful of children. Thus, the availability of comprehensive early childhood programs for high risk children in Pennsylvania is limited.
Since risk factors accumulate, and families and children at greatest risk are likely to benefit most from early childhood intervention programs, increased targeting of services and expanding their availability to all children at high risk would benefit Pennsylvania. The Commonwealth has successful models, but they are not funded to scale. We should establish a goal of offering early preventive programs

to all babies at high risk and their families and make meaningful progress toward it. In addition, there is a need to expand comprehensive pre-kindergarten (pre-K) programs, like Head Start, for at-risk four-year-olds, and make other early education investments before school age.

- **Sustain Investment In High Risk Children:** While the opportunities provided to children in their earliest years the gains made by these interventions must be sustained throughout life. Therefore, for low-income children, efforts to offer or expand full-day kindergarten programs and lower elementary class size have been shown to improve later school performance.

Pennsylvania needs to seize these opportunities for all children, and especially for children in poverty or otherwise at risk, to develop into caring, responsible, able future citizens and bridge the investment gap between potential and reality.

Shedding Light On Early Brain Development

(continued from page 1)

Production is at highest rates during the early years, peaking during ages 2 through 10.

In its zeal, the brain overproduces the number of connections. Those seldom or never used, will be "pruned" or eliminated. Those used often enough during various day to day experiences tend to survive and will become permanent.

During this ingenious process, individual brain cells connect with thousands of others, so that by age 3, roughly 85% of the brain's core structure will be formed, laying the foundation for who the child will become.

As we continue to learn more about the brain, age-old questions about the relative roles of nature and nurture, genes and the environment are slowly giving ground to a greater focus on the variety of ways heredity and experience jointly influence this fascinating process.

In the past, the brain was thought to be complete at birth. We now know that it is like some gifts under the Christmas Tree -- it comes with "some assembly required."

However, parents aren't provided with an instruction booklet to assist them when their child is born, and often times parents and other caregivers miss critical opportunities to nurture the brain's development.

Facts Behind the Faces of Pennsylvania's Children:

Poor Outcomes Point to Missed Opportunities For Adolescents...

Dropouts

- Each year, more than 21,000 students, or nearly 4% of students enrolled in Pennsylvania's high schools, drop out.
- Youth who drop out of school are less likely to be regularly employed well into their 20s.
- Jobs available to dropouts generally do not pay well, are unstable, and have limited opportunities for upward mobility.

Juvenile Delinquency

- Each year, Pennsylvania's juvenile courts place more than 4,200 youths in institutions.
- This means one in 300 Pennsylvania youth aged 10-17 are on a problematic path to adulthood and have diminished community safety.

Table Outcome Legend

▲▲▲▲ Performs Much Better Than Average
▲▲▲ Performs Better Than Average
▲▲ Performs Worse Than Average
▲ Performs Much Worse Than Average

Table Source: Children's Data Base of Office of Child Development, University of Pittsburgh. Methodology similar to *The State of the Child in Pennsylvania, 1997*, Appendix. Note: The poverty estimates have a wide margin of error. For example, the 19.7% statewide is plus or minus 1.8%.

	Dropouts			Juvenile Court Delinquency Placements		
	Average # 94-95--96-97	Per 100 Students Grades 9-12	Outcome	Average # 1994 - 96	Per 1000 Youth 10-17	Outcome
Pennsylvania	**21,022**	**3.96%**	---	**4,214**	**3.25**	---
County						
Adams	117	2.91%	▲▲▲	17	1.80	▲▲▲
Allegheny	1,506	2.90%	▲▲▲	670	5.48	▲
Armstrong	80	2.03%	▲▲▲	5	0.61	▲▲▲
Beaver	204	2.29%	▲▲▲	29	1.39	▲▲▲
Bedford	88	3.24%	▲▲	5	0.76	▲▲▲
Berks	635	3.77%	▲▲	154	4.19	▲
Blair	214	3.12%	▲▲	32	2.03	▲▲▲
Bradford	149	4.08%	▲▲	7	0.92	▲▲▲
Bucks	503	2.01%	▲▲▲	214	3.23	▲▲▲
Butler	249	3.02%	▲▲▲	22	1.13	▲▲▲
Cambria	161	2.14%	▲▲▲	30	1.60	▲▲▲
Cameron	11	3.58%	▲▲	2	3.65	▲
Carbon	82	2.95%	▲▲▲	8	1.19	▲▲▲
Centre	70	1.70%	▲▲▲▲	15	1.44	▲▲▲
Chester	363	2.23%	▲▲▲	49	1.10	▲▲▲
Clarion	66	2.62%	▲▲▲	0	0.00	▲▲▲▲
Clearfield	143	2.93%	▲▲▲	30	3.07	▲▲
Clinton	56	3.12%	▲▲	8	1.79	▲▲▲
Columbia	92	2.44%	▲▲▲	3	0.40	▲▲▲▲
Crawford	106	2.71%	▲▲▲	22	2.03	▲▲
Cumberland	240	2.94%	▲▲▲	45	2.11	▲▲
Dauphin	471	4.47%	▲	155	6.05	▲
Delaware	554	2.80%	▲▲▲	112	2.03	▲▲
Elk	51	3.23%	▲▲	4	0.95	▲▲▲
Erie	397	3.02%	▲▲▲	166	4.98	▲
Fayette	237	3.33%	▲▲	22	1.23	▲▲▲
Forest	4	1.84%	▲▲▲	1	0.94	▲▲▲
Franklin	211	3.82%	▲▲	21	1.45	▲▲▲
Fulton	27	3.46%	▲▲	0	0.00	▲▲▲▲
Greene	62	2.84%	▲▲▲	5	0.94	▲▲▲
Huntingdon	55	2.65%	▲▲▲	7	1.44	▲▲▲
Indiana	122	2.71%	▲▲▲	12	1.16	▲▲▲
Jefferson	67	2.66%	▲▲▲	16	2.82	▲▲
Juniata	27	2.32%	▲▲▲	5	1.76	▲▲▲
Lackawanna	264	3.16%	▲▲	58	2.60	▲▲
Lancaster	727	3.85%	▲▲	140	2.67	▲▲
Lawrence	133	2.62%	▲▲▲	14	1.30	▲▲▲
Lebanon	126	2.39%	▲▲▲	29	2.14	▲▲
Lehigh	379	3.06%	▲▲	120	4.00	▲
Luzerne	379	2.90%	▲▲▲	64	1.97	▲▲
Lycoming	243	3.97%	▲▲	57	4.11	▲
McKean	77	3.05%	▲▲	7	1.25	▲▲▲
Mercer	160	2.63%	▲▲	35	2.53	▲▲
Mifflin	100	5.50%	▲	5	0.86	▲▲▲
Monroe	185	2.82%	▲▲▲	42	3.30	▲▲
Montgomery	568	2.18%	▲▲▲	95	1.36	▲▲▲
Montour	20	2.37%	▲▲▲	3	1.35	▲▲▲
Northampton	434	3.72%	▲▲	43	1.62	▲▲▲
Northumberland	194	4.37%	▲	16	1.52	▲▲▲
Perry	94	3.71%	▲▲	8	1.43	▲▲▲
Philadelphia	7,334	11.56%	▲	1,278	8.07	▲
Pike	15	1.47%	▲▲▲▲	12	3.22	▲▲
Potter	31	3.06%	▲▲	3	1.33	▲▲▲
Schuylkill	186	2.89%	▲▲▲	31	1.89	▲▲▲
Snyder	49	3.05%	▲▲	4	0.84	▲▲▲
Somerset	83	1.94%	▲▲▲	2	0.21	▲▲▲▲
Sullivan	4	1.26%	▲▲▲▲	1	1.77	▲▲▲
Susquehanna	72	2.67%	▲▲▲	7	1.42	▲▲▲
Tioga	47	2.16%	▲▲▲	10	1.91	▲▲▲
Union	29	2.32%	▲▲▲	4	0.93	▲▲▲
Venango	134	3.89%	▲▲	8	1.07	▲▲▲
Warren	65	2.78%	▲▲▲	7	1.39	▲▲▲
Washington	243	2.47%	▲▲▲	36	1.57	▲▲▲
Wayne	80	3.01%	▲▲▲	7	1.28	▲▲▲
Westmoreland	449	2.50%	▲▲▲	69	1.72	▲▲▲
Wyoming	31	2.06%	▲▲▲	4	1.03	▲▲▲
York	670	3.77%	▲▲	91	2.28	▲▲

Births to Single Teens			Children Below Poverty			Children Receiving TANF		
Average # 1994 - 96	Per 100 Births	Outcome	# 1993	Per 100 Children < 18 yrs.	Outcome	# June 1998	Per 100 Children < 18 yrs.	Outcome
14,395	**9.51%**	---	**582,194**	**19.7%**	---	**257,878**	**8.91%**	---
73	7.39%	▲▲▲	2,328	10.8%	▲▲▲▲	467	2.16%	▲▲▲
1,301	8.39%	▲▲▲	60,849	20.8%	▲▲	26,860	9.60%	▲
65	7.91%	▲▲▲	3,706	19.8%	▲▲	764	4.25%	▲▲▲
193	9.11%	▲▲▲	9,549	20.7%	▲▲	2,717	6.12%	▲▲▲
58	10.82%	▲▲▲	2,695	21.0%	▲▲	282	2.25%	▲▲▲
455	10.03%	▲▲▲	14,792	17.6%	▲▲▲	4,917	5.85%	▲▲▲
169	11.21%	▲▲▲	7,651	22.8%	▲▲	2,188	6.75%	▲▲▲
72	10.50%	▲▲▲	3,494	20.2%	▲▲	863	5.06%	▲▲▲
297	4.04%	▲▲▲▲	10,730	7.1%	▲▲▲▲	2,821	1.88%	▲▲▲
127	5.96%	▲▲▲▲	5,453	13.1%	▲▲▲	993	2.36%	▲▲▲
183	10.92%	▲▲	7,821	20.1%	▲▲	2,377	6.40%	▲▲▲
8	11.52%	▲	252	16.7%	▲▲▲	79	5.39%	▲▲▲
53	9.18%	▲▲	2,200	15.9%	▲▲▲	395	2.90%	▲▲▲
66	4.95%	▲▲▲▲	3,148	12.6%	▲▲▲	547	2.20%	▲▲▲
285	5.27%	▲▲▲▲	9,494	9.2%	▲▲▲▲	2,359	2.27%	▲▲▲
37	7.84%	▲▲▲	2,233	22.0%	▲▲	452	4.55%	▲▲▲
101	10.75%	▲▲	4,629	22.3%	▲▲	1,098	5.43%	▲▲▲
50	11.46%	▲	1,953	21.6%	▲▲	541	6.16%	▲▲▲
52	7.87%	▲▲▲	2,151	14.8%	▲▲▲	425	3.00%	▲▲▲
95	8.79%	▲▲▲	5,683	24.1%	▲	1,472	6.34%	▲▲▲
145	6.31%	▲▲▲▲	3,649	7.8%	▲▲▲▲	566	1.23%	▲▲▲
397	11.97%	▲▲	11,086	18.3%	▲▲	5,011	8.42%	▲▲▲
498	7.00%	▲▲▲	18,586	14.1%	▲▲▲	8,940	6.91%	▲▲▲
35	8.14%	▲▲▲	1,057	11.3%	▲▲▲▲	203	2.23%	▲▲▲
485	12.92%	▲	15,692	20.8%	▲▲	7,136	9.63%	▲
214	12.32%	▲	12,448	33.9%	▲	5,138	14.39%	▲
3	7.63%	▲▲▲	224	20.8%	▲▲	23	1.85%	▲▲▲
144	9.71%	▲▲	4,363	13.6%	▲▲▲	764	2.43%	▲▲▲
21	12.16%	▲	648	16.3%	▲▲▲	137	3.50%	▲▲▲
45	9.87%	▲▲	3,184	29.7%	▲	1,110	10.54%	▲
49	10.15%	▲▲	2,131	19.9%	▲▲	413	3.89%	▲▲▲
63	7.01%	▲▲▲	5,017	22.7%	▲▲	946	4.41%	▲▲▲
45	8.40%	▲▲▲	2,497	20.4%	▲▲	524	4.38%	▲▲▲
20	7.13%	▲▲▲	787	13.8%	▲▲▲	66	1.16%	▲▲▲
194	8.33%	▲▲▲	9,079	18.6%	▲▲	2,516	5.33%	▲▲▲
501	7.51%	▲▲▲	18,515	15.2%	▲▲▲	3,369	2.77%	▲▲▲
109	10.32%	▲▲	5,935	25.3%	▲	1,964	8.61%	▲▲▲
143	9.98%	▲▲	3,575	12.1%	▲▲▲	963	3.32%	▲▲▲
330	8.95%	▲▲	9,979	14.2%	▲▲▲	3,873	5.62%	▲▲▲
295	8.86%	▲▲▲	14,000	19.3%	▲▲	3,654	5.27%	▲▲▲
159	10.90%	▲▲	6,262	20.1%	▲▲	1,567	5.22%	▲▲▲
65	12.69%	▲	2,699	22.5%	▲▲	996	8.54%	▲▲▲
141	10.17%	▲▲	6,609	22.4%	▲▲	2,461	8.48%	▲▲▲
55	8.94%	▲▲	2,585	21.5%	▲▲	551	4.68%	▲▲▲
89	6.22%	▲▲▲▲	3,489	11.9%	▲▲▲▲	904	2.98%	▲▲▲
356	3.84%	▲▲▲▲	11,314	6.9%	▲▲▲▲	3,862	2.38%	▲▲▲
12	5.35%	▲▲▲▲	570	12.5%	▲▲▲	102	2.29%	▲▲▲
245	8.47%	▲▲▲	7,008	11.4%	▲▲▲▲	2,165	3.55%	▲▲▲
90	9.00%	▲▲	4,072	17.7%	▲▲▲	824	3.72%	▲▲▲
46	8.39%	▲▲▲	1,419	11.9%	▲▲▲▲	255	2.14%	▲▲▲
4,243	17.55%	▲	167,655	43.3%	▲	129,134	34.69%	▲
13	3.90%	▲▲▲▲	1,037	11.2%	▲▲▲▲	223	2.28%	▲▲▲
19	10.13%	▲▲	1,064	22.2%	▲▲	325	6.88%	▲▲▲
141	9.08%	▲▲	5,699	16.4%	▲▲▲	1,326	3.97%	▲▲▲
31	6.81%	▲▲▲	1,580	16.0%	▲▲▲	195	2.00%	▲▲▲
66	7.87%	▲▲▲	4,471	21.7%	▲▲	712	3.56%	▲▲▲
6	9.71%	▲▲	223	15.1%	▲▲▲	26	1.79%	▲▲▲
37	10.67%	▲▲	2,266	19.6%	▲▲	477	4.21%	▲▲▲
47	12.24%	▲	2,395	22.1%	▲▲	403	3.79%	▲▲▲
25	6.57%	▲▲▲	1,306	14.6%	▲▲▲	242	2.76%	▲▲▲
69	10.63%	▲▲	3,691	23.5%	▲▲	1,045	6.78%	▲▲▲
46	9.56%	▲▲	1,955	16.8%	▲▲▲	411	3.63%	▲▲▲
181	7.97%	▲▲▲	9,576	19.6%	▲▲	2,440	5.18%	▲▲▲
47	8.92%	▲▲▲	2,011	18.0%	▲▲▲	413	3.69%	▲▲▲
262	6.58%	▲▲▲	15,707	17.9%	▲▲▲	3,638	4.28%	▲▲▲
30	8.93%	▲▲▲	1,390	17.0%	▲▲▲	259	3.18%	▲▲▲
397	8.89%	▲▲▲	10,879	12.0%	▲▲▲▲	2,989	3.30%	▲▲▲

... And A New Generation At Risk

Births to Single Teens

- One in 10 births in Pennsylvania is to a single mother under 20 years of age. These children are more apt to spend at least their early years in poverty and in a single parent home -- both significant risk factors.

Young Child Poverty

- More than 500,000 Pennsylvania children under age 18 live in families whose income is below the federal poverty level. In Montgomery, Bucks and Cumberland counties, 7% of children live in poverty. In Greene, Fayette and Philadelphia counties, 30% or more live in poverty.

Children in Welfare Families

- Typically, children living in the most severe economic circumstances are those living in families receiving welfare, now called Temporary Assistance to Needy Families, or TANF.
- More than 257,000, or one in 11 Pennsylvania children, live in TANF families. Counties with the highest rates of TANF children include Philadelphia, Fayette, Greene, Erie and Allegheny. Counties with the lowest rates include Juniata, Cumberland, Sullivan, Forest and Bucks.

Note: The number of Pennsylvania children receiving TANF has declined 20% since March 1997 when Pennsylvania began implementing changes in welfare legislation. The economic well-being of children no longer in welfare families is not known.

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Founded in 1990, PPC works with individuals and organizations in the public and private sectors to develop common agendas and strategies that promote the well-being of Pennsylvania's children.

PPC advocates for children and their families through government relations, research and analysis, community organizing, public awareness, training and technical assistance. PPC is statewide, independent and bipartisan.

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The University of Pittsburgh Office of Child Development was founded in 1986 to build partnerships to advance issues important to children, youth, and families through research and education.

Among its current activities, OCD promotes interdisciplinary research and educational programs; stimulates, plans, and manages collaborative human service demonstration projects; coordinates and produces needs assessments and research briefs on issues related to children, youth, and families; and provides a range of interdisciplinary program evaluation services and technical assistance to human service agencies and funders.

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